

# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

---

April 1, 2005

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Peter H. Hess, Environmental Scientist III/Engineering, Co-Team Lead  
Wayne Western, Environmental Scientist III/Bond Requirements, Co-Team Lead

RE: Methane Degasification Wells GVH#1-8, Andalex Resources, Inc., Centennial Project, Aberdeen Mine, C/007/019, Task ID #2161

### **SUMMARY:**

The Division received an amendment from the Centennial Mine to drill degas holes. This memo refers to holes drilled in April 2005 - these include holes 1, 5, and 6. The Permittee is responsible for any stipulations or requirements made by the Division.

---

## TECHNICAL MEMO

---

### TECHNICAL ANALYSIS:

## GENERAL CONTENTS

### IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

#### **Analysis:**

The Identification of Interest information is in the Mining and Reclamation Plan, Volume 1, Section R645-301-112, Identification of Interests. This information was incorporated by the UDOGM on December 19, 1995. The information has not changed.

The corporate officers have not changed.

David R. and Mildred Cave, et al, and Mathis Land Company are the surface ownership in Sections 1, 31, and 36. See Figure 1-1 of the submitted application.

A review of Figure 1-1, as contained in the approved mining and reclamation plan for the Centennial Project / Aberdeen Mine, indicates that the coal ownership in Section 1, 31, and 36 where the degasification wells are being proposed is by the United States of America (USA).

The wells are located within the currently approved Mine permit area, and will be located throughout the panel lengths of Longwall Panels #6 and #7.

The U.S. Department of Labor, Mine Safety and Health Administration has issued three identification numbers relative to the Centennial Project; these are:

- 1) MSHA No. 42-01474 for the Pinnacle Mine,
- 2) MSHA No. 42-01750 for the Apex Mine, and
- 3) MSHA No. 42-02028 for the Aberdeen Mine.

All are contained in Volume 1, Section 112.700, page 14, MSHA Numbers of the approved mining and reclamation plan.

## TECHNICAL MEMO

---

Volume 1, Section 112.600 Interest in Contiguous Lands of the methane well submittal indicates that Andalex Resources, Inc., does have interest in existing unleased Federal coal reserves at such time as currently controlled reserves become exhausted.

### Findings:

The submitted information meets the minimum regulatory requirements of this section.

## VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

### Analysis:

Page 1-4, section **113, Violation Information** of the application states that the DOGM should refer to the same section in the approved MRP. Appendix B of the approved MRP contains violation information that occurred through November of 1996. This information is outdated, and does not meet the required “three-year prior to application date” requirement.

The applicant was notified of the outdated information on March 7, 2005. In response, the permittee submitted violation histories for the three years prior to February 23, 2005 (i.e., from 2/23/02 to 2/23/05). Only one violation had been issued at the Centennial Project in the three previous years. Other violation histories were submitted for the Crandall Canyon Mine (C/015/032), as well as the West Ridge Mine (C/007/041) for the three-year period. No violations had been issued for the Wildcat Loadout facility (C/007/033).

There are no violations or cessation orders pending for the Centennial operation at this time.

### Findings:

The submitted information meets the minimum regulatory requirements of this section.

## RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

---

## TECHNICAL MEMO

---

### Analysis:

The permittee does have a signed surface-use agreement in place with the surface landowners, David R. and Mildred Cave, et al., and Mathis Land Company.

The Federal Coal lease UTU-79975 (Summit Creek lease) allows the permittee the authority to access the roof strata above the coal seam relative to Section 31, (GVH #'s 1,2,3,5,6,7).

Federal Coal lease U-69600 (Mathis Lease) allows the permittee the authority to access the roof strata above the coal seam relative to Section 1, (GVH #4).

Coal ownership in Section 36 (GVH #8) is by Mathis Land Company. This coal lease is located in Appendix "J" of the approved MRP. This lease contains all coal in Section 36, T12S, R10E. The lease was initiated on January 1, 1998 for a term of ten years. Thus, the lease is current and Andalex has all legal right to penetrate the coal seam via drilling at location GVH #4.

### Findings:

The minimum regulatory requirements of this section have been met.

## LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

### Analysis:

Table1-1, Degas Well Locations, Pine Canyon, Utah Quadrangle, Salt Lake Meridian as depicted on Page 1-1 of the submittal provides the legal description for methane degasification wells GVH #1, GVH #5 and GVH #6. Figure1-1, included with the submittal depicts the proposed well locations as they relate to the permit boundary for the Aberdeen Mine. Therefore, the need for the applicant to address that the permit area is within an area designated as unsuitable for mining is unnecessary. The well locations exist within the area that has been permitted for coal extraction.

### Findings:

The minimum regulatory requirements have been addressed.

## **PERMIT TERM**

Regulatory References: 30 CFR 778.17; R645-301-116.

### **Analysis:**

The current State of Utah mining permit issued by the Division of Oil, Gas and Mining was renewed on May 24, 2002. Same remains in effect until January 6, 2007. The proposal to drill the methane degasification wells for the Centennial Project / Aberdeen Mine operation has been received during the current permit term.

### **Findings:**

The minimum regulatory requirements have been met.

## **PUBLIC NOTICE AND COMMENT**

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

### **Analysis:**

There is no need for a public notice and comment period.

### **Findings:**

The requirements of this regulation have been addressed.

## **FILING FEE**

Regulatory Reference: 30 CFR 777.17; R645-301-118.

### **Analysis:**

The proposal to drill the methane de-gasification wells is not a permit application, but is an amendment to the currently approved mining and reclamation plan.

### **Findings:**

This requirement is not relative to this permit amendment.

---

## TECHNICAL MEMO

---

### MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

#### Analysis:

The only map submitted with this application is Figure 1-1, Aberdeen Mine, GVH Proposed Location Map. Figure 1-1 showed surface topography, and the underground workings of the Aberdeen Mine, with an accurate depiction of the longwall panels. Also depicted are surface property boundaries / ownership, and coal ownership.

The Permittee stated on page 5-1, Section 510 Introduction, paragraph two, that the “designs and other information herein presented will be of a general nature or in the form of typicals, since the proposed well sites are not yet accessible for detailed surveying or studies.” Therefore, the permittee has not made a final determination as to the location of any of the degasification borehole locations.

All of the above maps have a P.E. certification by a registered Utah engineer. All maps have scale shown.

#### Findings:

The minimum regulatory requirements have been addressed.

### OPERATION PLAN

#### MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

#### Analysis:

The purpose of the proposed methane de-gasification wells is to enhance the venting/dilution capability of the Permittee’s ventilation system, such that dangerous levels of methane gas are not allowed to accumulate within the gob area (area where the coal seam has been extracted and the roof has been allowed to cave) and/or the bleeder entries.

**Findings:**

The minimum requirements of this section have been met.

**EXISTING STRUCTURES:**

Regulatory Reference: 30 CFR 784.12; R645-301-526.

**Analysis:**

The proposal to construct the methane degasification wells will occur in an area well outside of the disturbance created by the main mine facilities. There are no known dwellings, public buildings, schools, churches, or community buildings within 1,000 feet of the pre-determined well locations. No blasting will be done during the construction / reclamation process of the wells.

**Findings:**

There are no known structures in the area of the methane well development sites. This regulation is not applicable.

**RELOCATION OR USE OF PUBLIC ROADS**

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

**Analysis:**

All access roads within section 1, T13S, R10E, section 31, T12S, R11E, and section 36, T12S, R10E are owned by the surface landowners. There are no public roads involved in the submittal.

**Findings:**

The Permittee meet the minimum regulatory requirements.

**AIR POLLUTION CONTROL PLAN**

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, -301-420.

---

## TECHNICAL MEMO

---

### Analysis:

The permittee's submittal commits to watering of the access roads (both the private surface roads as well as the portions to be constructed). See Chapter 4, page 4-3, section **424, Fugitive Dust Control Plan**, Task ID #2161. The application of water will be of sufficient frequency and quantity to maintain the surface material in a damp/moist condition unless the weather is below freezing.

### Findings:

The submitted information meets the minimum regulatory requirements of this section.

## COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

### Analysis:

The degas wells are needed to ensure that the Permittee can continue to mine coal resources.

### Findings:

This regulation is not applicable to this amendment.

## ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

### Analysis:

#### Road Classification System

The privately owned access roads will remain in place after the venting phase of the wells is completed. Each of the road lengths that will be constructed to access the sites has been classified as "primary". Each will be reclaimed upon the final reclamation of the well site.

Figure 5-5, Typical Road Cross Sections depicted the basic design that will be used to construct the roadway lengths that are necessary to access the methane well pads. A roadway



## TECHNICAL MEMO

---

width of sixteen feet will be cut/filled for the distance necessary to access each well site. Figure 5-5 is P.E. certified by Mr. Dan Guy, Utah registered professional engineer.

### **Plans and Drawings**

The application contained a typical road cross section for the length of access which requires construction, Figure 5-5. The drawing depicted an access roadway width of sixteen feet. The drawing is P.E. certified by Mr. Dan Guy, Utah registered professional engineer.

### **Primary Road Certification**

The Permittee's classified the roadway lengths that require construction for the wells as primary. These roads will have surface constructed of compacted native subsoil material. The road was depicted on Figure 5-1, (general). The roadway length that is developed to access each well pad location will be reclaimed upon the completion of the methane venting process.

### **Findings:**

The information provided meets the minimum regulatory requirements of this section.

## **SPOIL AND WASTE MATERIALS**

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

### **Analysis:**

#### **Disposal Of Noncoal Mine Wastes**

All noncoal waste generated by the well drilling activities will be disposed of in the same manner as waste generated at the main mine facilities area.

There will be no noncoal waste disposal at the proposed well sites.

#### **Coal Mine Waste**

Chapter 6, Geology, page 6-2, Section 625, (Task ID #2161) states, "A sampling waiver is not requested at this time for the well sites". Section 624.300, page 6-2 also states "no test borings or drill cores are planned at the well sites". Therefore, none of the coal seam will be

---

## TECHNICAL MEMO

---

extracted for analysis. The wells will be permitted as a mining related activity under the R645 coal rules, and not as a minor coal exploration application.

### **Findings:**

The minimum regulatory requirements of this section have been addressed.

### **EXISTING STRUCTURES:**

Regulatory Reference: 30 CFR 784.12; R645-301-526.

### **Analysis:**

The proposal to construct the methane degasification wells will occur in an area well outside of the disturbance created by the main mine facilities. There are no known dwellings, public buildings, schools, churches, or community buildings within 1,000 feet of the proposed well locations. There is no indication that blasting will be done during the construction / reclamation process of the well sites.

### **Findings:**

There are no known structures in the area of the methane well development sites.

### **AIR POLLUTION CONTROL PLAN**

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, -301-420.

### **Analysis:**

The Permittee committed to watering of the access roads (both the private surface roads as well as the portions to be constructed). See Chapter 4, Section 424, Fugitive Dust Control Plan, Task ID #2161. The application of water will be of sufficient frequency and quantity to maintain the surface material in a damp/moist condition unless it is below freezing.

### **Findings:**

The submitted information meets the minimum regulatory requirements of this section.

## **SUPPORT FACILITIES AND UTILITY INSTALLATIONS**

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

### **Analysis:**

The proposed methane vent wells are intended to enhance the mine ventilation system, allowing additional venting and dilution capability for the combustible mine gases that are inherent in the coal seam, the gob area, and the adjacent strata. Thus, they are a support facility.

Chapter 5, page 5-5, Section 526.200 Utility and Support Facilities of the submittal addresses this requirement. According to that information, no utilities will be installed at the well sites. A portable methane-exhausting unit will be installed, and the operation of that machine will be initiated with portable propane bottles. Upon start up, the device will be switched over to operate from the methane concentrations venting from the well, and thus, will be self-sufficient.

### **Findings:**

The information provided meets the minimum regulatory requirements of this section.

## **SIGNS AND MARKERS**

Regulatory Reference: 30 CFR Sec. 817.11; R645-301-521.

### **Analysis:**

Chapter 5, Section 521.200, Signs and Markers of the MRP addressed this requirement of the R645 coal rules. The Permittee committed to install a mine and permit identification sign at each well site that is developed. The identification sign will contain the following information: mine name, company name, company address, and telephone number, MSHA identification number, and the permanent program identification number.

The Permittee committed to install disturbed area perimeter markers to identify all acreage to be affected before beginning mining activities.

Stream buffer zone signs will not be required at the proposed well site.

Topsoil storage signs will be placed on all topsoil stockpiles.

---

## TECHNICAL MEMO

---

All signs and markers will be maintained until no longer needed, generally until all Phase III bond release requirements have been met.

### Findings:

The information provided meets the minimum regulatory requirements of this section.

## MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### Analysis:

#### Mining Facilities Maps

The methane well submittal included three maps/drawings for the wells including:

- 1) A plan view drawing, which depicts the “venting phase” of the pad area, showing a portion of the acreage that has been contemporaneously reclaimed.
- 2) A typical cross section for each well pad, depicting the pre-disturbed and final reclamation surface configuration, as well as the Operational surface configuration.
- 3) A plan view of the “approximate” drilling layout for each of the proposed well sites showing the drill hole location and the mud pit. The plan view shows the various methods to control and treat intercepted precipitation, including sloping the pad(s), and the installation of berms and silt fences.

All three figures for each of the three proposed wells are P.E. certified by Mr. Dan Guy, Utah registered professional engineer.

#### Mine Workings Maps

Not applicable to this amendment.

#### Monitoring and Sampling Location Maps

All maps relative to this requirement are incorporated into the approved mining and reclamation plan for the Centennial Mine.

### **Certification Requirements**

As noted above, all plans, drawings, and maps that are relative to this submittal have been certified by a Utah registered professional engineer.

### **Findings:**

The submitted information is adequate to meet the minimum regulatory requirements of this section.

## **RECLAMATION PLAN**

### **GENERAL REQUIREMENTS**

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

### **Analysis:**

Upon completion of the drilling activities, all machinery will be removed and the mud pits backfilled and compacted. The area of the pad not needed for the venting process will be reclaimed by returning it to approximate original contour. An exhaust blower will be set up to create a low pressure area across the well head, allowing the combustible mine gases to vent to the atmosphere. This will remain at the site for the length of the life of the well.

Upon completion of the venting phase, the blower and wellhead will be removed and the well casing will be plugged to the maximum depth possible, up to an elevation five feet below the surface. The casing will then be cut off, and final reclamation activities will then commence, returning the remaining disturbed area to approximate original contour.

Revegetation activities will commence; the only remaining equipment will be the disturbed area perimeter fence, and the permittee identification sign.

### **Findings:**

The minimum regulatory requirements have been addressed.

---

## TECHNICAL MEMO

---

### POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

#### Analysis:

Chapter 5, Section 553.100 Disturbed Area Backfilling and Grading, Post-Mining Land Use stated, “the disturbed area will be reclaimed in a manner that supports the approved post-mining land use. Refer to Sections 411 and 412 for additional detail.”

#### Findings:

The submitted information is adequate to address the minimum regulatory requirements of this section.

### APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

#### Analysis:

The Permittee made the following commitment relative to approximate original contour; “the well site will be returned to its approximate original contour after reclamation is completed. The wells site are flat so achieving AOC would be easy.

Sediment controls will consist of gouging the surface to create depressions and mounds that store and impede the movement of water. As vegetation becomes established on the reclaimed surface, erosion potential will be further minimized.

#### Findings:

The submitted information meets the minimum regulatory requirements of this section.

### BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

**Analysis:**

**General**

The wells are located on flat areas. The reclamation plan calls for the areas to be returned to the approximate original surface configuration. The site will not have any highwalls or spoil.

**Previously Mined Areas**

The area has not been mined previously; the requirements of this section are not applicable to the methane well submittal.

**Findings:**

The information submitted meets the minimum regulatory requirements of this section.

**MINE OPENINGS**

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

**Analysis:**

Reclamation of the methane vent wells is addressed in Chapter 5; section **540 RECLAMATION PLAN**, section **550, RECLAMATION DESIGN CRITERIA AND PLANS**, and section **560, PERFORMANCE STANDARDS**.

Section **541.100, Commitment** indicates, "Upon permanent cessation of methane venting, Andalex Resources, Inc., will permanently reclaim all affected areas in accordance with the R645 regulations and this reclamation plan."

The sealing of wells involved the minimum regulatory requirements associated with R645-301-765. All openings will be sealed in accordance with Federal and State Regulations. The casings will be plugged at the bottom to hold concrete. A lean concrete mixture will be poured into the casing until the concrete is within five (5) feet of the surface. At that time, the casing will be cut off at ground level and the rest of the casing will be filled with lean concrete. The concrete will be allowed to harden before the final reclamation is completed.

---

## TECHNICAL MEMO

---

### Findings:

The Permittee meet the minimum regulatory requirements.

## ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

### Analysis:

#### Reclamation

All road construction and improvements needed to access GOV #1 were done as part of an emergency order. Under the emergency order, the Permittee is not required to reclaim any sections of the road that were upgraded or constructed.

All access roads to GOV #5 and GOV #6 will be reclaimed.

### Findings:

The submitted information meets the minimum regulatory requirements of this section.

## CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

### Analysis:

#### General

Upon completion of the drilling phase of the well(s), approximately 60-70% of the disturbance(s) will be reshaped to approximate original contour.

### Findings:

The submitted information meets the minimum regulatory requirements.



## **MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

### **Analysis:**

#### **Affected Area Boundary Maps**

The affected area is shown on Figure 1-1.

#### **Bonded Area Map**

The bonded area for each well is depicted on Figure 5-1.

#### **Final Surface Configuration Maps**

The final surface configuration for the GOV #1, GOV #5 and GOV #6 are shown on Figure 5-1.

### **RECOMMENDATION:**

The Division should approve the amendment.